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(54) Multicarrier transmission on power lines

(57) An Orthogonal Frequency Division Multiplexed (OFDM) communications system comprising a communication station. The communications station includes a an OFDM transmitter comprising an encoder for encod-

ing digital information, a transmission means for transmitting said information and a sub-band allocation means arranged to allocate sub-bands by selecting from a set of pre-determined parameters.

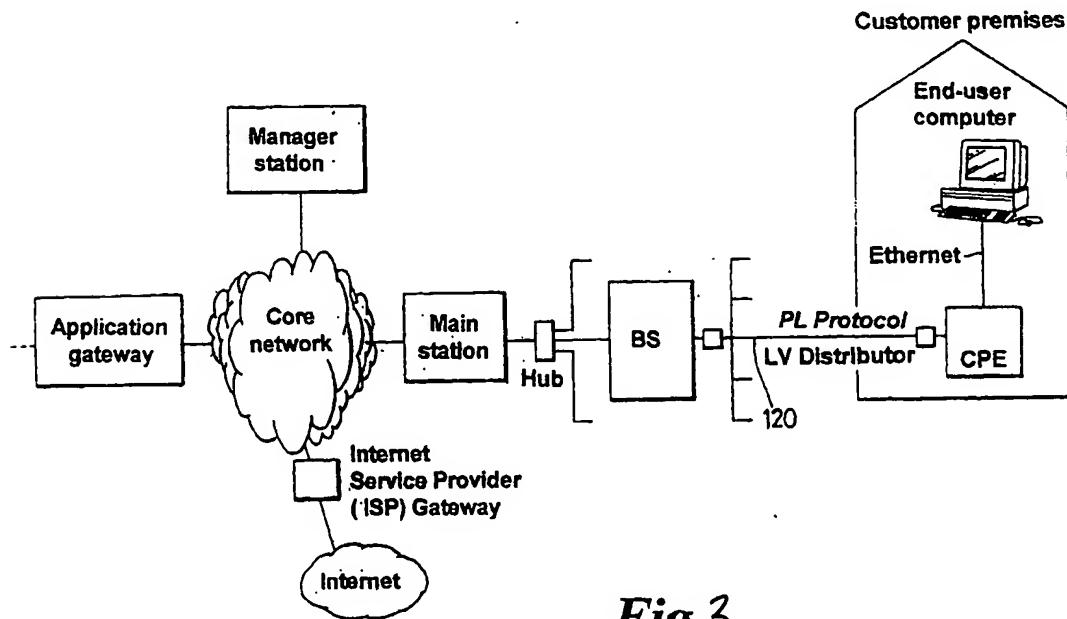


Fig 3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 30 7793

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------|-----------------|----------------------------------|----------|-----------|------------------|------------|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.7) | | | | | | |
| X | PATENT ABSTRACTS OF JAPAN vol. 1996, no. 02, 29 February 1996 (1996-02-29) & JP 07 273741 A (TOSHIBA), 20 October 1995 (1995-10-20) * abstract * | 1-7, 10-12 | H04L27/26 H04B3/54 H04H1/04 | | | | | | |
| X | EP 0 762 701 A (ADVANCED DIGITAL TELEVISION BROADCASTING LABORATORY) 12 March 1997 (1997-03-12) * figure 8 * | 1-7, 10-12 | | | | | | | |
| X,P | HARA, BUDSABATHON: "Spread spectrum-based subcarrier recovery method for multi-carrier code division multiplexing system" EUROPEAN TRANSACTIONS ON TELECOMMUNICATIONS, vol. 10, no. 4, July 1999 (1999-07), pages 369-376, XP000866689 Milan, IT ISSN: 1124-318X * figure 3 * | 1-7, 10-12 | | | | | | | |
| X,P | EP 0 939 527 A (SONY) 1 September 1999 (1999-09-01) * abstract; figure 4 * | 1-7, 10-12 | H04L H04B | | | | | | |
| <p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>19 February 2002</td> <td>SCRIVEN P.</td> </tr> </table> <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p> | | | | Place of search | Date of completion of the search | Examiner | THE HAGUE | 19 February 2002 | SCRIVEN P. |
| Place of search | Date of completion of the search | Examiner | | | | | | | |
| THE HAGUE | 19 February 2002 | SCRIVEN P. | | | | | | | |

**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing more than ten claims.

Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-7,10-12



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-7, 10-12

Inclusion of symbols with larger
than normal guard intervals

2. Claims: 8, 9, 13-16

Sub-band allocation by choosing
between predetermined sets of
parameters

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 99 30 7793

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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19-02-2002

| Patent document cited in search report | | Publication date | | Patent family member(s) | Publication date |
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| EP 0762701 | A | 12-03-1997 | | JP 2802255 B2 JP 9135230 A EP 0762701 A2 US 5818813 A | 24-09-1998 20-05-1997 12-03-1997 06-10-1998 |
| EP 0939527 | A | 01-09-1999 | EP | 0939527 A1 | 01-09-1999 |